Amendments to the Claims

Please replace all prior listings of claims in this application with the following:

1-26. (Canceled)

27. (Withdrawn - Currently Amended) A method for ~~diagnosis~~ detection of carcinomas and their precursor lesions ~~and/or prognosis of disease course~~ comprising a) obtaining a biological test ~~cell containing tissue~~ sample from an individual b) determining the level ~~and/or subcellular localization~~ of DNase-X ~~molecules~~ polypeptide or nucleic acid in the test sample ~~cells of said tissue~~; c) comparing the level ~~and/or subcellular localization~~ of DNase-X molecules within said test sample to the level of DNase-X ~~contents~~ within a corresponding control sample~~, not affected by the disease being tested;~~ and d) ~~wherein the diagnosis or prognosis of disease course is predicted from considering~~ finding ~~a significant increased~~ an increased level of DNase-X polypeptide or nucleic acid in the test sample relative to the level of DNase-X in the control sample ~~relative to the wild type level of DNase-X molecule in said tissue test sample and/or cellular nuclei as indicative of~~ indicates the presence of a carcinoma or precursor lesion ~~said disorder or of the prognosis of the disease course~~.

28. (Withdrawn - Currently Amended) The method according to claim ~~1~~ 27, wherein the detection of the DNase-X ~~molecules~~ polypeptide or nucleic acid comprises ~~the detection of the accessibility of particular~~ detecting accessible regions of the ~~molecules~~ polypeptide or nucleic acid.

29. (Withdrawn - Currently Amended) The method according to claim ~~1~~ 27, wherein the test sample is ~~selected from a group comprising~~ blood, plasma, serum, liquor, lymph, bone marrow, swabs, washes, lavages, secretions, transsudates, exsudates, sputum, stool, urine, semen, cell- and tissue-samples, punctuates or biopsies.

30. (Withdrawn - Currently Amended) The method according to claim ~~1~~ 27, wherein the carcinoma is ~~selected from a group comprising~~ cancer of the head and the neck, cancer of the respiratory tract, cancer of the gastrointestinal tract, cancer of the skin and its appendages, cancer of the central and peripheral nervous system, cancer of the urinary system, cancer of the reproductive system, cancer of the endocrine system, cancer of the soft tissues and bone, cancer of the lymphopoietic and hematopoietic system, breast cancer, lung cancer, cervical cancer, colorectal cancer or anogenital cancer.

31. (Withdrawn - Currently Amended) The method according to claim ~~1~~ 27, wherein the detection of the level of the DNase-X ~~molecules~~ polypeptide or nucleic acid is carried out using at least one probe specifically binding to the marker polypeptide or nucleic acid to be detected.

32. (Withdrawn - Currently Amended) The method according to claim ~~5~~ 31, wherein the at least one probe is detectably labelled.

33. (Withdrawn - Currently Amended) The method according to claim ~~6~~ 32, wherein the label is selected from the group consisting of a radioisotope, a bioluminescent compound, a chemiluminescent compound, a fluorescent compound, a metal chelate, a biologically relevant binding structure such as biotin or digoxygenin ~~or~~ and an enzyme.

34. (Withdrawn - Currently Amended) The method according to claim ~~5~~ 32, wherein the at least one probe is an antibody, ~~a~~ an antigen-binding fragment of an antibody, a peptidomimetic comprising an antigen-binding epitope or a mini-antibody.

35. (Withdrawn - Currently Amended) The method according to claim ~~8~~ 34, wherein the detection comprises an immuno-cytochemical detection procedure.

36. (Withdrawn - Currently Amended) The method according to claim ~~5~~ 31, wherein the at least one probe is ~~being~~ a nucleic acid ~~hybridising to a marker nucleic acid is used for the detection of the DNase-X marker molecules~~.

37. (Withdrawn - Currently Amended) The method according to claim ~~10~~ 36, wherein the detection of the level of DNase-X using the at least one probe ~~reaction~~ comprises a nucleic acid amplification reaction.

38. (Currently Amended) A probe for detecting cancer, the probe being capable of ~~comprising a probe~~ specifically binding to or reacting with DNase-X polypeptide or nucleic acid and being capable of indicating a level ~~amount and/or concentration and/or localisation~~ of DNase-X in a ~~tissue~~ biological test sample ~~or a sample containing cells and/or cell fragments and/or cell nuclei~~.

39. (Withdrawn - Currently Amended) A method of identifying and obtaining a drug candidate for ~~therapy~~ treatment of carcinomas and their precursor lesions comprising the following steps:

a) contacting a DNase-X polypeptide ~~or a cell expressing DNase-X said polypeptide~~ with said drug candidate to be screened, in the presence of components capable of providing a detectable signal in response to DNase-X activity~~, cell proliferation or cell differentiation with said drug candidate to be screened~~ under conditions to allow continued DNase-X activity~~;, cell proliferation or changes in cell differentiation~~ and

b) detecting presence or absence of a signal or increase of the signal generated from DNase-X activity, ~~cell proliferation or cell differentiation,~~ wherein the presence or increase of the signal is indicative ~~for~~ of a putative drug.

40. (Currently Amended) Kit for the ~~detection and/or~~ treatment of carcinomas and their precursor lesions, comprising ~~at least DNase-X or a compound selected from a group comprising~~

~~a) a binding partner to a DNase-X polypeptide;~~

~~b) an activators/agonists or inhibitors/antagonists of a DNase-X polypeptide;~~

~~c) an activator or inhibitor of the expression of a DNase-X polypeptide; and~~

~~d)~~ a drug ~~candidate~~ as ~~described~~ identified in claim ~~13~~ 39.

41. (Currently Amended) A pharmaceutical composition useful for treating carcinomas and their precursor lesions comprising at least ~~DNase-X or a compound selected from a group comprising~~

~~a) one or more DNase molecules being nucleic acids or polypeptides;~~

~~b) one or more activators/agonists or inhibitors/antagonists of a DNase polypeptide;~~

~~c) one or more activators or inhibitors of the expression of a DNase polypeptide;~~

~~d) one or more a binding partners of DNase polypeptides polypeptide; and~~

e) ~~or one or more~~ a putative drug ~~candidates~~ as ~~described~~ identified in claim ~~13~~ 39; ~~for production of a.~~

42. (Currently Amended) The pharmaceutical composition according to claim ~~15~~ 41, wherein the carcinoma is ~~selected from a group comprising~~ cancer of the head and the neck, cancer of the respiratory tract, cancer of the gastrointestinal tract, cancer of the skin and its appendages, cancer of the central and peripheral nervous system, cancer of the urinary system, cancer of the reproductive system, cancer of the endocrine system, cancer of the soft tissues and bone, cancer of the lymphopoietic and hematopoietic system, breast cancer, anogenital cancer or colorectal cancer.

43. (New) A kit comprising a) a probe according to claim 38; and b) a DNase-X polypeptide or nucleotide positive control sample associated with an absence of carcinomas or their precursor lesions.